

THE GECKOES (SAURIA, GEKKONIDAE) OF THE GENUS
SPHAERODACTYLUS OF THE DOMINICAN PENÍNSULA
DE BARAHONA, HISPANIOLA

Albert Schwartz

The Península de Barahona in the República Dominicana on the Antillean island of Hispaniola lies to the south of the Sierra de Baoruco (and the extreme eastern portion of the mainly Haitian Massif de la Selle) and extends maximally some 50 km to the south of these ranges. Since the peninsula lies in the rain-shadow of the mountains to the north, it is xeric. However, it is not a uniform desert, as a limestone ridge, reaching an elevation of 322 m, more or less bisects it from north to south and forms a barrier or a specialized habitat for several species of amphibians and reptiles. The Sierra de Baoruco, the easternmost of the three massifs which form the spine of the Hispaniolan south island (*sensu* Williams, 1961), is generally a mesic range. Since this massif reaches the coast of the Península de Barahona in the east and carries mesic conditions to sea level in many places between Barahona and Enriquillo, the apparently montane (but more appropriately mesic) fauna descends to low levels in the extreme east. To the immediate north of the Sierra de Baoruco lies the very xeric (in places below sea level) Valle de Neiba, and to the west the very high and mesic Massif de la Selle in Haiti. Xerophilic species on the peninsula are, therefore, effectively cut off from their relatives to the north by both the intervening high mountains and their concomitant mesic conditions. This Barahona faunule has come to be regarded as a result of the so-called Barahona Entrapment, in that the fauna of the Península de Barahona is distinctive when compared with that of more northern xeric regions on Hispaniola.

A major taxonomic problem in this area concerns lizards of the genus *Sphaerodactylus*. Shreve (1968:5) described a new subspecies of *S. notatus* Baird from the town of Oviedo south of the mountains, but Schwartz and Thomas (1975:149) considered *S. n. randi* Shreve to be a subspecies of *S. difficilis* Barbour. The latter is the most widespread species of *Sphaerodactylus* on the Hispaniolan north island, at least in the República Dominicana; its distribution in Haiti is limited to the northwestern littoral (including Ile de la Tortue) and the Plateau Central at Hinche. The latter authors' interpretation of the affinities of *S. n. randi* is due to the fact that, on the south island, a population of *S. difficilis* occurring from the vicinity of the city of Barahona along the eastern coast of the peninsula (Fig. 1) seemed to form a continuum geographically with the known distribution of *S. n. randi*. Although local *S. difficilis* differ somewhat from long series

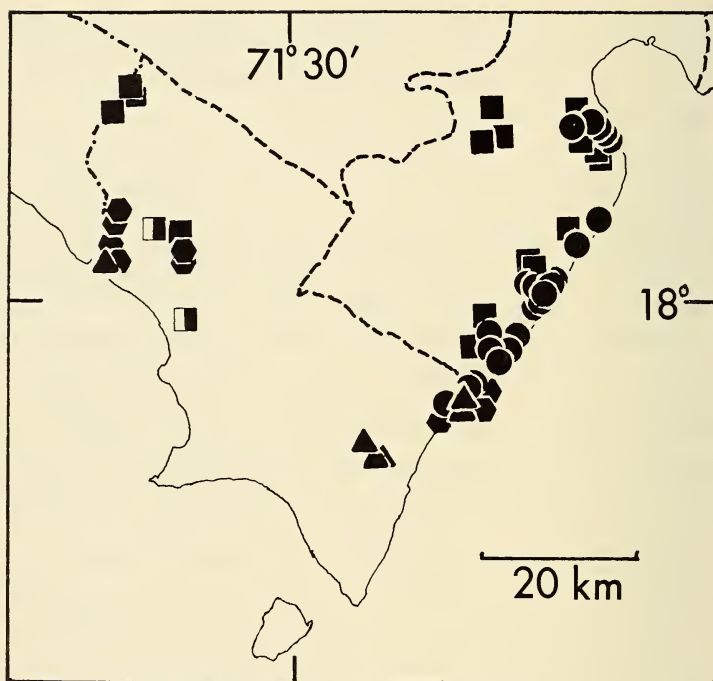


Fig. 1. The Península de Barahona, República Dominicana, Hispaniola, showing the known distributions of geckoes of the genus *Sphaerodactylus*. The dot-and-dash line on the left is the Dominico-Haitian border; the dashed lines delimit the provinces of Pedernales (which includes most of the peninsula), Barahona (to the upper right), and Independencia (upper left). The Massif de la Selle and the Sierra de Baoruco extend diagonally from upper left to about 18° latitude in the east. Symbols are: triangles, *S. randi*; circles, *S. difficilis*; solid squares, *S. armstrongi*; hexagons, *S. streptophorus*; semi-solid squares, *S. thompsoni*. Symbols for *S. difficilis* and *S. armstrongi* in the upper right lie north of the Sierra de Baoruco. Other species of *Sphaerodactylus* which occur on the northern slopes of the Sierra de Baoruco and in the Valle de Neiba (*S. rhabdotus*, *S. altavelensis*, *S. cryphius*, *S. leucaster*) are not shown on the map although they occur within the limits here displayed.

of toptotypical *randi* in scutellation, these two populations differ strikingly in pattern details.

In addition to *S. difficilis* (including *randi*), three other species of *Sphaerodactylus* are present on the Península de Barahona. One of these (*S. thompsoni* Schwartz and Franz) is known from only two specimens taken west of the north-south limestone ridge; the affinities of this species are with the otherwise exclusively Haitian *S. copei* Steindachner. *S. armstrongi* Noble and Hassler is a mesophile occurring in the Massif de la Selle and the Sierra de Baoruco. There it is the only species at moderate to high

elevations (to 1,775 m) but in the eastern coastal region of the peninsula, *S. armstrongi* occurs at sea level in mesic situations (river valleys and ravines). The species also occurs on the northern slopes of the Sierra de Baoruco south of Cabral. *S. streptophorus* Thomas and Schwartz is a small species which occurs in the lowland xeric portions of the peninsula but also ascends both the Sierra de Baoruco and the Massif de la Selle to moderate and high elevations (400 m to 1,600 m); this species also occurs in the Vallée de Trouin and the area near Jacmel in Haiti, some 90 km to the west. On the eastern coast of the peninsula, *S. difficilis* occurs at and near sea level but maybe encountered as high as 370 m (6 km N Enriquillo).

The ecological relationships of these four species are complex. In the simplest terms, *S. armstrongi* is in the mesic uplands and *S. difficilis* occurs in the lowlands; but under special circumstances (penetration into the lowlands of mesic upland conditions and flora) the two species may be found sympatrically. Although *S. streptophorus* also seems to be primarily a xerophile, it ascends the mountains to 1,775 m but has not been taken sympatrically with *S. armstrongi*. Its lowland range overlaps broadly with that of *S. difficilis*, and the two species occur syntopically in the region south of Enriquillo. *S. thompsoni* is not known to be sympatric with any other *Sphaerodactylus*. Considering its known altitudinal distribution, it might be expected to be sympatric with *S. difficilis* and *S. streptophorus*, but not with *S. armstrongi*. However, the latter possibility cannot be dismissed as the proper approximation of precise ecological situations might well allow this xerophilic species to occur with the mesophilic *S. armstrongi*. Finally, examination of Fig. 1 indicates that no species of *Sphaerodactylus* has as yet been taken across the central portion of the peninsula, a distance of some 35 km. It is in this precise region that the relatively high limestone ridge occurs. As rocks and other cover are abundant, it is amazing that no geckoes have been taken from this seemingly suitable region. However, collecting is difficult there, since the flora (*Acacia*, cacti) is hostile, and eroded and loose limestone offers havens to small lizards which are virtually inaccessible to the collector. Absence of human habitation and its associated debris, as well as scarcity of fallen and decaying arborescent vegetation minimize the chance of finding these diminutive lizards in this area.

In August 1975, Michael H. Strahm and I collected on Cayo Pisaje, an islet lying off the eastern shore of the Peninsula de Barahona south-east of the village of Juancho. The islet is small (ca. 1 × 1.5 km), covered with a dense stand of a tall grass, and with scattered coconut palms and a fringe of mangroves and sea grape (*Coccoloba*). We quickly encountered geckoes which were moderately abundant under the dead *Cocos* fronds. These nondescript geckoes are one of the most drab members of the genus

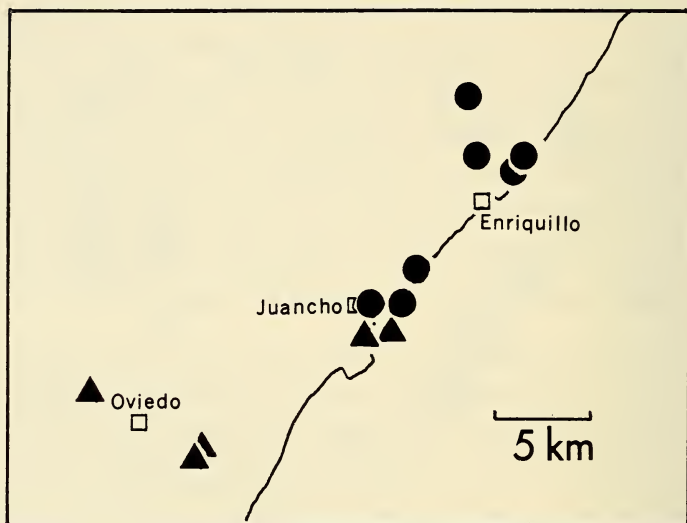


Fig. 2. Eastern Península de Barahona, showing details of the distribution of *S. difficilis* (circles) and *S. randi* (triangles). In the Enriquillo-Juancho-Oviedo (nuevo) region of contact between the two species. The three lower left triangles are the known distribution of *S. r. randi*; the two center-right triangles are the distribution of *S. r. strahmi*.

in the Antilles. In the short series secured, some individuals showed enough remnant markings of *randi* to indicate that they were a derivative of that taxon. Since the nearest known *randi* locality (the type-locality) lies some 12 km to the southwest, and since we had already taken *S. difficilis* near Enriquillo (10 km to the northeast), and since it seemed unlikely that a *randi*-derivative would occur only on Cayo Pisaje, we searched for these lizards on the mainland. A long series of similarly patterned and colored lizards was taken in an extensive *Cocos* grove opposite Cayo Pisaje. In this grove the lizards were exceptionally abundant in piles of *Cocos* fronds and old decaying husks. No other lizards were found there.

Since *S. difficilis* was known from localities only 10 km to the north, it seemed possible that intergrades between the two taxa might be found in the intervening area. But collections from the area between Juancho and the coast opposite Cayo Pisaje, as well as between Enriquillo and the Pisaje region were clearly identical with *S. difficilis* which occurs along the eastern margin of the Península de Barahona. Even within 1 km of the Cayo Pisaje area we secured *S. difficilis* in *Cocos* trash, in both coastal and slightly inland situations (Fig. 2); the companion of *S. difficilis* in such situations was *S. streptophorus*. Thus, in *Cocos* trash piles

between Enriquillo and Juancho one finds either *S. difficilis* or lizards related to *randi* from further south. The distances between these two populations has been narrowed to less than 1 km; it seems unlikely that *randi* is to be considered as a subspecies of *S. difficilis*. I therefore consider *S. randi* to be a species distinct from *S. difficilis*, a species limited to the Barahona Entrapment.

S. randi is known to occur in three separate regions: the type-locality and vicinity; the town of Pedernales on the Dominico-Haitian border; and on Cayo Pisaje and the adjacent mainland southeast of Juancho, all xeric and at sea level. The species has not been found on even the lower montane slopes. The three samples of *S. randi* differ from each other in coloration and pattern. No specimens have been collected from areas between these localities. Between Juancho and Oviedo, for instance, the road passes away from the coast, and easily-collected sites (such as *Cocos* groves) do not occur. Between Oviedo and Pedernales there appears to be ample suitable habitat for a xerophile, yet we have never secured *S. randi* (nor for that matter any *Sphaerodactylus* with the exception of *S. thompsoni*) between a locality 3 km NW Oviedo and Pedernales, a distance of 45 km. In interpreting differences between the three populations of *S. randi*, I propose the descriptions of two new subspecies. The original description (Shreve, 1968:5) was based upon eight specimens. I have examined the holotype, and there are now 180 additional specimens from the vicinity of the type-locality, on 103 of which I have made scale counts and measurements.

Sphaerodactylus randi Shreve, new combination

Definition.—A species of *Sphaerodactylus* with large, acute, strongly keeled, flattened, imbricate dorsal scales, axilla to groin 27 to 39; no area of middorsal granules or granular scales; dorsal body scales with 1 to 5 hair-bearing organs, each with 1 (very rarely 2) hair, around apex. Dorsal scales of tail keeled, acute, imbricate, and flat-lying; ventral scales of tail smooth, rounded, not enlarged midventrally; gular scales usually smooth but occasionally keeled or partially keeled; chest scales smooth; ventral scales rounded, imbricate, axilla to groin 27–37, smooth; scales around midbody 45–57; internasals 0–3 (mode 1); upper labials to mid-eye 3 (rarely 4); escutcheon with a broad and compact central area and extensions to about midpoint of thigh or a little beyond ($4-7 \times 12-26$). Dorsal coloration and pattern variable, not strongly sexually dichromatic; dorsal ground color from pale tan to dark brown, either uniform or flecked with darker to give a “salt and pepper” effect; females of one population at times with orange body ocelli; males with heads heavily dotted to vermiculate dark brown or black on a yellowish or tan ground, heads in females

either dotted with dark brown or with a trilineate pattern; throat either concolor with venter (flesh, whitish, dark brown) or with upper side of head (yellow); scapular patch (in juveniles) more or less square and black, with a widely opened pale chevron along its anterior face and with two ocelli, either included in or lying along the posterior edge of the scapular patch, these pale ocelli whitish to orange, and at times fused to each other to give a black patch with both anterior and posterior margins pale or orange; shoulder pattern much reduced in males (usually absent but ocelli and bar at times indicated) and less reduced in adult females, which have the patch, bar, and ocelli present but obscure or even lacking.

Sphaerodactylus randi methorius, new subspecies

Holotype.—CM 60501, an adult male, from Pedernales, Pedernales Province, República Dominicana, one of two taken 28 June 1964 by D. C. Leber. Original number ASFS V2662.

Paratypes.—ASFS V2663, same data as holotype; ASFS V2592-93, same locality as holotype, 26 June 1964, R. Thomas; ASFS V2921, same locality as holotype, hatched 9 July 1954 from egg taken 2 July 1964, R. Thomas; ASFS V29855-57, Pedernales, south of center of town, Pedernales Province, República Dominicana, 11 August 1971, A. Schwartz.

Definition.—A subspecies of *S. randi* characterized by the combination of pale tan dorsal ground color, dorsum flecked or not with slightly darker brown, scapular patch faint to absent in males, indicated to present and an elongate bar in females, anterior pale chevron and posterior pale ocelli present or indicated in both sexes; head trilineate in females, and vaguely trilineate, the pattern overlain by dark spotting, in males; throat finely dotted or stippled dark brown in both sexes; juveniles with prominent scapular patch and anterior bar and paired posterior ocelli included within the patch rather than lying along its posterior margin; venter whitish to flesh; throat scales smooth.

Description of holotype.—An adult male with a snout-vent length of 27 mm and tail 26 mm; dorsal scales between axilla and groin 31, ventrals between axilla and groin 32; midbody scales 51; 3/3 supralabials to eye-center; 1 internasal; 10 fourth toe subdigital lamellae; throat, chest and ventral scales smooth; escutcheon 5 × 14. Dorsum tan with faint darker brown "salt and pepper" speckling; head vaguely spotted darker brown over a faint indication of female trilineate pattern; dark scapular patch very tiny but anterior bar and posterior ocelli present, very faint and pale; throat yellowish with some scattered brown dotting; venter light grayish; underside of tail yellowish.

Variation.—The series of *S. r. methorius* consists of 3 males, 2 females,

and 3 juveniles. The largest male (ASFS V29855) has a snout-vent length of 29 mm, the largest female (ASFS V29857) 31 mm. The juveniles have snout-vent lengths of 15 mm and 16 mm; the hatchling has a snout-vent length of 15 mm. Scale counts on the short series are: dorsals 27-31 ($\bar{x} = 29.6$), ventrals 30-34 (31.8), midbody scales 50-57 (52.0); all have 3/3 supralabials and 1 internasal; fourth toe lamellae vary between 10 and 13 ($M_0 = 11$), and throat, chin, and ventral scales are smooth in all. The escutcheon has 5-6 \times 14-23 scales ($\bar{x} = 5.3 \times 19.7$).

Males are tan dorsally, flecked or not with brown; the scapular patch is faint to absent and the anterior bar and posterior ocelli are only indicated; the head is dull yellow, dotted with dark brown, but in the 3 males there is still clearly an indication of the trilineate female pattern; the throat is yellowish, flecked with dark brown; the venter is whitish to flesh. Females are colored dorsally like the males but both are "salt and pepper"; the patch is present but elongate and bar-like in one female, and almost absent in the other; bar and ocelli are clearly indicated, the ocelli peripheral and posterior to the patch; the head pattern is trilineate, with a median dark line from the snout to the transverse prepatch bar and two broad lateral lines that extend to above the forelimb insertion and thus are lateral to the patch but not confluent with it. The throat is concolor flesh with the venter and is finely flecked with dark brown. The three juveniles show the basic *S. randi* pattern most vividly. The head is boldly trilineate, the patch is large, dark, bordered anteriorly by a pale bar and with the two pale ocelli enclosed within the posterior margin of the patch.

The name *methorius* is from the Greek meaning "bordering on," in reference to the geographic position of Pedernales.

Comparisons.—There is some difficulty in comparing the short series of *S. r. methorius* with the very long series of *S. r. randi*. The latter appears to reach a slightly larger size (males to 31 mm, females to 32 mm) than *S. r. methorius*. Scale counts (dorsals, ventrals) average more (32.6, 32.2) in *S. r. randi* than they do in *S. r. methorius* (29.6, 31.8), but in both cases, the extremes in *S. r. randi* encompass those of *S. r. methorius*. Midbody scales on the other hand average less (50.6) in *S. r. randi* than in *S. r. methorius* (52.0); extremes in the former embrace the range in the latter. All *S. r. methorius* have 3/3 supralabials to eye-center; this is also the mode in *S. r. randi*, but counts of 3/4 (11 specimens) and 4/4 (1) also occur. Internasals in *S. r. randi* are distributed modally as 1 in 98 individuals, but this scale is absent in 1, 2 in 11, and 3 in 1 lizard. Fourth toe lamellae vary between 8 and 14, but the mode (11) is the same in *S. r. randi* as in *S. r. methorius*. The escutcheon is slightly longer and broader in *S. r. randi* with counts of 4-7 \times 12-26 ($\bar{x} = 5.8 \times 20.3$); once again extremes in *S. r. randi* encompass those in *S. r. methorius*. In sum-

mary, scutellar and size differences between the two subspecies seem slight.

In color and pattern, however, the two subspecies differ. The dorsal ground color in *S. r. randi* is gray to dark brown, with a strong tendency toward the darker coloration. The dorsum in both sexes may or may not be flecked with darker scales to give a "salt and pepper" effect. Juveniles have both patch and anterior bar and ocelli present and well developed, but the ocelli lie on the margin of the patch in *S. r. randi*, not included within it as they are in *S. r. methorius*. In almost all (57) male *S. r. randi*, the head shows no indication of the trilineate female head pattern; only one male (ASFS V23205—snout-vent length 28 mm) shows a trilineate pattern. In males the head has a faintly yellow wash and is finely to coarsely covered with dark brown to black dots or blotches. In females, the head is trilineate or covered with dark spotting as in the males. The throat in males is yellowish with dark dotting of the same intensity as that on the top of the head. The throat is concolor with the venter and either unmarked or finely stippled with dark brown in the females. The venter is yellow-gray and the iris is yellow. The scapular patch is absent in males, but vaguely indicated in three of 57 specimens; the patch-associated bar and ocelli (which may be fused to form a posterior bar) are usually also absent, but vaguely indicated in five males. In females, the scapular patch is absent or reduced to form a dark anterior-to-posterior bar; the pre-patch bar and posterior ocelli are always present and are whitish to buffy. In summary, *S. r. methorius* differs from *S. r. randi* as follows: pale dorsal color (tan versus gray to dark brown); juveniles with ocelli included within the dark scapular patch rather than lying along its posterior border; and pre-patch bar and ocelli present in males.

Remarks.—*S. r. methorius* has been collected within the town of Pedernales, about 1 km S of the center of the settlement. The collecting site is an isolated and fairly large shaded *Acacia* grove that includes scattered *Cocos* with fallen fronds and also much debris from human habitation. In this grove, *S. r. methorius* occurs syntopically with *S. streptophorus*, which is much the commoner sphaerodactyl there. No *S. randi* were secured when this grove was visited in 1975, but *S. streptophorus* was more abundant than on previous visits. No *Sphaerodactylus* have been found elsewhere in the immediate environs of Pedernales and *S. randi* was taken there only in 1964 and 1971, despite other visits to the *Acacia* grove. The egg from which the hatchling emerged was taken from a communal nest about 1.4 m above the ground underneath the bark of a standing tree. Since Pedernales lies on the Dominico-Haitian border, separated at this point by the small and intermittent Río Pedernales, it is probable that *S. r. methorius* occurs in extreme southeastern Haiti.

At the type-locality of *S. r. randi*, much the same situation prevails except

that the more eastern subspecies is locally very abundant. The old town of Oviedo was virtually demolished by Hurricane Inez in 1966. An abundance of fallen thatch roofs, boards, and other hurricane wreckage still present in 1969 made collecting *S. r. randi* a simple task. Visits to the Oviedo area since 1963 have yielded no specimens in undisturbed forest and scrub, nor since 1969 from natural situations despite the abundance of rocks and other debris in the now hurricane damaged forest. The long series from 3 km NW Oviedo (nuevo) was collected by an isolated group of families who took these lizards from debris around human habitations. Undoubtedly *S. r. randi* is scattered throughout this general region but the population must be minimal in undisturbed situations and thrives only in the immediate vicinity of settlements.

Sphaerodactylus randi strahmi, new subspecies

Holotype.—USNM 197316, an adult male, from 3 km SE Juancho, opposite Cayo Pisaje, Pedernales Province, República Dominicana, one of a series taken 17 August 1975 by A. Schwartz and M. H. Strahm. Original number ASFS V42429.

Paratypes.—ASFS V42428, ASFS V42430–33, ASFS V42441–45, ASFS V42460–66, CM 60502–09, MCZ 132363–69, USNM 197317–22, same data as holotype; ASFS V42418–27, Cayo Pisaje, Pedernales Province, República Dominicana, 15 August 1975, A. Schwartz, M. H. Strahm.

Definition.—A subspecies of *S. randi* characterized by the following: dark brown dorsal ground color without darker scales (not “salt and pepper”); females often with scattered orange ocelli; scapular patch, anterior bar and ocelli much reduced to absent in both sexes; heads of males with tan ground color densely covered with black dots or spots, finely stippled with dark brown in females, never an indication of the trilineate head pattern in either sex or in juveniles; venter dull flesh to brown; juveniles with a small dusky gray scapular patch with concomitant bar and ocelli indicated; throat scales usually keeled or at least with some keeling, but occasionally smooth.

Description of holotype.—An adult male with snout–vent length 28 mm and tail length 24 mm; dorsal scales between axilla and groin 39; ventral scales between axilla and groin 30; midbody scales 50; 3/3 supralabials to eye-center; 1 internasal; 11 fourth toe subdigital lamellae; throat scales keeled, chest and ventral scales smooth; escutcheon 6 × 22. Dorsum dark brown and uniform (without darker scales to give a “salt and pepper” effect), head tan dotted or almost vermiculate with black, this pattern extending onto the throat which has a grayish ground; scapular patch and associated bar and ocelli absent; venter dark brown.

Variation.—The series of *S. r. strahmi* consists of 17 males, 22 females,

and 10 juveniles with snout-vent lengths 13–23 mm. Snout-vent lengths 29 mm in largest males (ASFS V42432, ASFS V42418) and 31 mm in largest female (ASFS V42441). Scale counts for the series are: dorsals 29–39 (\bar{x} = 32.9), ventrals 28–36 (31.7), midbody scales 47–55 (49.6); supralabials modally 3/3 (44 individuals) with occasional counts of 3/4 (4) and 4/4 (1); internasals 1 (48) or 2 (1); fourth toe lamellae vary between 9 and 12 (M_0 = 11); throat scales keeled in 19 adults, partially keeled in 9, completely smooth in 6 adults (all juveniles have smooth throat scales). Escutcheon scales 4–7 \times 12–23 (\bar{x} = 5.8 \times 18.6).

Males uniform dark brown dorsally, females vary between light and dark brown; neither sex with any darker scales or “salt and pepper” dorsum. Some females with scattered and well defined orange ocelli over the back. Dark scapular patch absent in both sexes. Orange anterior bar and paired scapular ocelli present in only 2 males and 8 females. Head tan above, in males, heavily dotted or vermiculate with black; head in females concolor with dorsum (brown) and finely stippled with brown; this same fine stippling continues on throat. Venter varies from dull grayish flesh to dark brown, iris golden. Specimens from the mainland and from Cayo Pisaje were similar in scutellar details, coloration, and pattern.

Comparisons.—Size differences between *S. r. strahmi* and the two other subspecies are minimal; *S. r. strahmi* is perhaps the smallest. The mean of dorsal scales (32.9) is greater than those of the two other subspecies (29.6, 32.6), but the mean of ventral scales (31.7) lies below those of *S. r. methorius* (31.8) and *S. r. randi* (32.2). Midbody scales on *S. r. strahmi* average less (49.6) than those in *S. r. methorius* (52.0) and *S. r. randi* (50.6). In all these scale counts, differences are small. *S. r. strahmi* is distinctive in the large number of individuals (25) with at least some keeling on the gular scales; no *S. r. methorius* has the gular scales keeled, and only 6 of 112 *S. r. randi* have the gular scales keeled.

S. r. strahmi is a nondescript sphaerodactyl. Were it not for the dusky scapular patch areas in juveniles and the presence of the pre-patch bar and ocelli in a few adults, its relationships would be uncertain. The drab aspect of *S. r. strahmi* contrasts strongly with the more boldly marked *S. r. randi*.

The subspecies is named in honor of Michael H. Strahm who helped collect many of the type-series.

Remarks.—Specimens of *S. r. strahmi* from Cayo Pisaje were secured on sand under *Cocos* fronds and under a log. Those from the type-locality were taken in piles of *Cocos* fronds and decayed husks on sand, invariably from those nearest to the ground. None were found in upper parts of the piles. Although depth and circumference of frond piles affects the occurrence of many Antillean geckoes (i.e., small or shallow piles yield few to no geckoes, whereas deep and large piles which are cooler and

more moist yield more specimens), *S. r. strahmi* was encountered with equal frequency in small, shallow or large, deep piles. The 39 lizards were taken from 5 piles of varying sizes, and it appeared that additional piles would have provided a much larger number.

Discussion

Evidence for elevating *S. randi* to a species distinct from *S. difficilis* depends primarily on distributional patterns of the two taxa in the region between Enriquillo and Juancho. As the drabest subspecies of *S. randi*, *S. r. strahmi* is a virtually patternless dark lizard. The eastern Península de Barahona population of *S. difficilis* is, on the other hand, pale (tan) with a prominent and unreduced black scapular patch and two white ocelli in females, and a pair of pale ocelli and dark scapular patch occasionally indicated in males. The two species are quite distinctive as far as color and dorsal pattern are concerned. As far as scutellation is concerned, dorsals in the local *S. difficilis* vary between 24 and 33, whereas those of *S. r. strahmi* vary between 29 and 39; some overlap is obvious, but the scales in *S. difficilis* are larger. Rarely (8 of 80 individuals) are the gular scales of *S. difficilis* keeled, whereas this is the mode in *S. r. strahmi*. Finally, median subcaudal scales are broader than long in *S. difficilis* and are not enlarged in *S. randi*.

Geographically, the two species occur very close to each other (Fig. 2). The southernmost record for *S. difficilis* is 0.5 km E Juancho, whereas the northernmost record for *S. randi* is the mainland opposite Cayo Pisaje. The distance between these two points is only 0.8 km airline. *S. difficilis* also occurs at a locality 7 km SW and 1 km E Enriquillo; this locality is only 0.7 km northeast of Cayo Pisaje and slightly further from the only mainland station of *S. r. strahmi*.

In this region, *S. difficilis* and *S. randi* seem to be precise ecological equivalents. At the two southernmost stations for *S. difficilis*, the lizards were taken in *Cocos* groves, twice on an earthen substrate, and once on a sandy substrate near the ocean. On both Cayo Pisaje and the mainland, the *S. r. strahmi* were collected on sandy substrate. The area between the closest approximation of the two species is primarily mangrove swamp along the coast itself and salt marsh for some distance inland, situations altogether inhospitable for geckoes. It is possible that somewhere in this immediate region *S. randi* and *S. difficilis* occur syntopically, but this has not been verified. One problem is that *Cocos* groves, the simplest place for searching for *Sphaerodactylus*, are few and scattered in this region. Since the road north of Enriquillo extends to moderate elevations on the southern slopes of the Sierra de Baoruco, one has an excellent panoramic view of the entire region between Enriquillo and Oviedo, and

Cocos groves stand out boldly in contrast to other less arborescent vegetation. It is likely that we have collected in all coconut groves in this area.

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Literature Cited

- Schwartz, A., and R. Thomas. 1975. A check-list of West Indian amphibians and reptiles. Carnegie Mus. Nat. Hist. Spec. Publ. 1:216 pp.
- Shreve, B. 1968. The *notatus* group of *Sphaerodactylus* (Sauria, Gekkonidae) in Hispaniola. Breviora, Mus. Comp. Zool., 280:1-28.
- Williams, E. E. 1961. Notes on Hispaniolan herpetology. 3. The evolution and relationships of the *Anolis semilineatus* group. Breviora, Mus. Comp. Zool., 136: 1-8.

Miami-Dade Community College North, Miami, Florida 33167.